IN THE CLAIMS:

Please cancel claims 1-15 without prejudice or disclaimer of the subject matter thereof.

The following is a complete listing of claims in this application.

Claims 1-15 (canceled).

16. (new) Method for manufacturing M type hexaferrite powders of formula A $Fe_{12}O_{19}$ where A is a metal selected from the group consisting of Ba, Sr, Ca, Pb and mixtures thereof, comprising the steps of:

a) mixing iron oxide Fe_2O_3 and an A compound with a molar ratio $n=Fe_2O_3/AO$ of between 5.7 and 6.1, simultaneously with said mixing or subsequently thereto, grinding said mixture to an average particle size between 0.25 and 1 μm, with a predetermined degree of homogeneity, and simultaneously with of before said grinding, adding to said mixture a microstructure controlling agent;

b) shaping said ground mixture in the form of agglomerates of shape and size adapted to calcination, and calcining the shaped mixture in an oven at between 1100°C and 1300°C, in such a way as to form M type ferrite material in the form of a porous cake having:

-a transformation yield in crystallized M ferrite greater than 95%,

-an apparent density d_a lower than 3.5, or a porosity higher than 30%, and

-low cohesion energy at grain boundaries between primary particles leading to high brittleness; and

c) optionally grinding said porous cake to form a fine powder,

whereby grinding of the calcined agglomerates is not necessary to obtain a fine powder and grinding can be replaced

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by a simple dispersion of said cake.

17. (new) Process according to claim 1 wherein said agent comprises an additive allowing the transport of Fe^{3+} in gaseous phase during the calcination.

18. (new) Process according to claim 17, wherein the agent comprises $FeCl_3$ in an amount of between 0.1 and 0.5% by weight of mixture.

19. (new) Process according to claim 16, wherein the agent comprises a volatile oxide capable of substituting for Fe_2O_3 or A during said calcination, the incorporation of said volatile oxide being compensated, in the case of excess charge, by another addition of a bivalent metal substituting for Fe^{3+} to ensure the valency balance.

20. (new) Process according to claim 19, wherein the agent comprises Bi_2O_3 or V_2O_5 in an amount between 0.1 and 0.5% by weight of mixture.

21. (new) Process according to claim 16, wherein said mixture is calcined:

-either in two stages: at a temperature between 1225°C and 1275°C for less than 5 minutes, then at a temperature comprised between 1100°C and 1150°C for at least 30 minutes;

-or in a single stage at a temperature between 1200°C and 1300°C, for a time between 30 and 90 minutes.

22. (new) Process according to claim 16, wherein said grinding comprises a dry grinding or a humid phase grinding, the dry or humid phase grinding being carried out in the presence of metallic or ceramic grinding elements.

23. (new) Process according to claim 22, wherein the grinding elements comprise bars or balls loaded with or formed from ZrO_2 or tungsten carbide WC, having a content of Zr or W of between 0.05 and 0.5% by weight of said mixture, and transferred by wear and rubbing of said bars or balls to said

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mixture, or added to said mixture, acting under finely dispersed form as said agent.

24. (new) Process according to claim 16, wherein said iron oxide Fe_2O_3 has an average particle size between 0.25 and 1 μm.

25. (new) Process according to claim 16, additionally comprising incorporating into said mixture a particle size control agent.

26. (new) Process according to claim 25, wherein the particle size control agent comprises silica, calcium oxide, a derivative of silica, or a combination of silica and calcium oxide, with a content in equivalent silica of between 0.1 and 1% by weight of said mixture.

27. (new) Process according to claim 16, wherein n is equal to 6 ± 0.1.

28. (new) Process according to claim 16, wherein is equal to 5.9 ± 0.1.

29. (new) Process according to claim 16, wherein n is equal to 5.85 ± 0.15.

30. (new) Process according to claim 16, additionally comprising incorporating into said mixture substitution trivalent products B for A, and substitution bivalent products C for Fe^{3+}, B and C being chosen in such a way as to balance the valencies, and with a content chosen to form ferrites of formula $A_{1-x}B_xC_xFe_{12-x}O_{19}$, with x between 0.05 and 0.45.

31. (new) Process according to claim 30, wherein B is selected from the group consisting of Bi, La and rare earths, and C is selected from the group consisting of Ni, Co, Mg, Cd, Cu and Zn.

32. (new) Hexaferrite cake having an apparent density lower than 3 and an average particle size between 0.25 and 1 μm, obtained by the process according to claim 1, in which said dispersion replaces said step c) of grinding.

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